104. The display of claim 103, said plural picture elements comprising volumes of liquid crystal in a medium, said liquid crystal and medium being cooperative for selective operation to scatter or absorb light or to reduce such scattering or absorption.

105. A display for a Schlieren projection display system, comprising the display of claim 103,

said liquid crystal and medium being cooperative for selective operation to scatter light for projection or to reduce such scattering or absorption, and

said inherent mask comprising a mask between respective picture elements for transmitting light without substantial scattering.

106. ~~The display of claim 1, said separator comprising spacer means between~~ respective picture elements forming a grid of spacers and picture elements,

plural electrical drive means in spaced relation ~~for~~ selectively applying electrical input to respective picture elements,

said spacer means being located in relation to the space between respective ~~electrical drive means.~~

107. A method of making a display element for a projector, comprising,

dissolving a liquid crystal material in a medium,

curing different portions of the medium differently thereby to allow volumes of liquid crystal to form in respective portions of the medium and to allow portions of the medium to cure substantially without volumes of liquid crystal therein.

108. The method of claim 107, said curing comprising cross-linking.

109. The method of claim 107, said volumes being operative to scatter light or to reduce scattering.

110. The method of claim 107, said curing comprising curing sufficiently slow so lc leaves the medium.

111. The method of claim 107, said curing comprising curing sufficiently fast to create volumes of liquid crystal.

112. The method of claim 107, said curing comprising applying ultraviolet radiation.

A1 Cont

113. The method of claim 112, said curing comprising applying a mask to block ultraviolet radiation from areas where volumes are to occur, applying slow cure ultraviolet radiation to exposed areas to get cured areas without liquid crystal, removing said mask and applying fast cure ultraviolet to get volumes with liquid crystal.

114. A liquid crystal display system, comprising

a substrate having plural electronic drive elements in spaced apart relation,

plural volumes of liquid crystal in a medium, said volumes of liquid crystal arranged in overlying relation to respective electronic drive elements, said volumes of liquid crystal being selectively operable to scatter light or to transmit light without substantial scattering,

a mask between respective groups of volumes of liquid crystal, said mask being in overlying relation to said substrate and between respective electronic drive elements.

115. The system of claim 114, said mask being substantially transparent.

116. The system of claim 114, said mask being substantially non-scattering, said volumes being operative to scatter light in the absence of a prescribed input, and said volumes being operative to reduce scattering in response to a prescribed input.

117. The system of claim 114, wherein said liquid crystal comprises liquid crystal material having a birefringence of about 0.12 or less.

118. The system of claim 114, wherein said liquid crystal device includes a medium having plural volumes containing the liquid crystal material controls the angle of the light scattering as a function of the size of the volumes, and wherein the size of the volumes is about 5 microns or less.

A1 Con2

119. The system of claim 117, wherein the birefringence of the liquid crystal is between about 0.04 and about 0.08.

120. The system of claim 114, wherein the volumes of liquid crystal comprise liquid crystal material of relatively low birefringence in a medium that has surfaces to cause scattering of light in the absence of a prescribed input and reduces scattering in response to the prescribed input, wherein the surfaces interact with the liquid crystal material to cause scattering of light, and wherein the surfaces interact with the liquid crystal material to cause scattering of light due to a difference between the extraordinary index of refraction of the liquid crystal material and the index of refraction of the material of the surfaces.

121. The system of claim 114, wherein the ordinary index of refraction of the liquid crystal is substantially matched to the index of refraction of the medium, and wherein the liquid crystal has positive dielectric anisotropy.

122. The system of claim 114, wherein the liquid crystal is operationally nematic, operationally smectic or cholesteric.

123. A projection system in which an image is formed from nonspecular light, comprising

a collimated light input,

a liquid crystal device including liquid crystal material for selectively specularly transmitting light or non-specularly scattering light,

a mask at selected areas of the liquid crystal device for transmitting light without substantial scattering,

projection optics for receiving non-specularly scattered light for projection,

means to block the specularly transmitted light from projection by the projection optics, and

wherein the angle of non-specular scattering is controlled by limiting the liquid crystal material to a birefringence that is about 0.12 or less.

124. A projection system in which an image is formed from nonspecular light, comprising

a collimated light input,

a liquid crystal device including low birefringence liquid crystal material in volumes in a containment medium for selectively specularly transmitting light or non-specularly scattering light,

a mask at selected areas of the liquid crystal device for transmitting light without substantial scattering,

projection optics for receiving non-specularly scattered light for projection,

means to block the specularly transmitted light from projection by the projection optics, and